CURRICULUM VITAE FOR Dr. T M SHAHRIAR SAZZAD

Personal Details

Dr. T M Shahriar Sazzad
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Languages spoken: English, Bengali, Hindi, Urdu.

My Goal

To use a multidisciplinary approach that can utilize my experience in science and computing to support Medical Science.

Profile

Dr. T M Shahriar Sazzad's research is focused on the use of information technology in Medical Science especially cancer tissue analysis and identification (ovary, brain, breast, lung) and the application of AI, Machine learning, Computer Vision, Pattern Recognition, Deep Learning, Data Mining, Medical Image processing techniques to improve the analysis and identification process for medical histopathology experts, biomedical engineers and other related areas (i.e. agriculture, video image processing etc.).

He has published widely in the area of Medical Image Processing which includes 14 conference papers (11 IEEE and 3 Springer conference papers) and 7 journal papers (2 Journal papers submitted in IEEE Transaction in Medical Image Processing for review). Currently he is working ona patent in medical imaging.

Education

1) PhD, Edith Cowan University, Western Australia, Australia in 2018;
2) Master of Science (Information Technology), University of ABERTAY Dundee, Scotland, UK in 2007; and
3) Bachelor of Science in Computer Engineering, American International University, Bangladesh in 2003.

Professional Experience

2019 (August) to date: Assistant Professor (Dept. of Computer Science and Engineering), Military Institute of Science and Technology, Bangladesh.
2018 (May) to 2019 (July): Assistant Professor (Dept. of Computer Science) American International University of Bangladesh.
2018 (January) to 2017 (May): Assistant Professor (Dept. of Computer Science and Engineering) Green University of Bangladesh.
2017 (August) to 2017 (December): Lecturer (Dept. of Computer Science and Engineering) Green University of Bangladesh.
2013 (September) to 2017 (July): Lecturer (Dept. of Computer Science and Engineering) Green University of Bangladesh (on study leave).
2011 (May) to 2013 (August): Lecturer (Dept. of Computer Science and Engineering) Green University of Bangladesh.
2008 to 2010: Part-time Database Developer, Scotland, UK.

My Expertise: AI, Pattern Recognition, Machine Learning, Computer Vision, Image Processing, HCI

My research work is focused on the use of information technologies in Medical Science, Biomedical Engineering and related industries. My research focus has been on the application of microscopic image analysis and electronic-scanners (Ultrasound, MRI) to improve the identification accuracy for histopathology experts while reducing the time and cost. I am involved in Computer Vision, Machine Learning, Pattern recognition tools and decision systems, web and software systems.

Awards and Scholarships

1. 2018 AMP's PhD Research Presentation Award, State Winner for WA and 3rd position for Australia ($5000).
2. 2017 Queens-cliff PhD thesis writing Re-treat award winner, Australia ($2000).
3. 2016 Conference Funding award for IEEE BHI conference, LAS Vegas, USA Feb-2016. Edith Cowan University, WA, Australia ($1270).
4. 2013-2017 Conference travel grant, Edith Cowan University, WA, Australia ($4500).
5. 2013-2017 Edith Cowan University International Post Graduate Research Scholarship (ECUPRS (Intl), WA, Australia.
6. 2009 Awarded to attend the Summer School in Image processing, Coimbra, Portugal.
7. 1998 – 2003 Undergraduate Scholarship Award, American International University Bangladesh, Bangladesh.
8. 1999 – 2003 Government Stipend based on the merit in Higher School Secondary Certificate, Bangladesh.
9. 2000-2001 Runner-up (Quiz Competition), American International University Bangladesh, Bangladesh.
10. 2002 Runner-up (Computer Programming at AIUB).

Other Professional Highlights

1. Reviewer and track co-chair (ICREST) (2019).
2. Session co-chair (International Conference on Robotics, Electrical and Signal Processing Techniques (ICREST) (2019).
3. Reviewerfor International Conference on Innovation in Engineering and Technology (ICIET) (2018).
4. Reviewed one IEEE access journal paper as a reviewer (2018).
5. Was nominated for 4 IEEE conference best papers awards (awarded runner up for 2 papers). Among 4 nominated papers one has been accepted to submit the extended version to be published in IET journal (Q1).
6. Received IBCBES attendance certificate (2016), IEEE IECBES, Malaysia.
7. Received effective teaching certificate, Scotland, UK (2010).
8. Session chair for IEEE ICTAI, Italy (2015).
9. Session co-chair for IEEE BHI, USA (2016).
10. Student IEEE member 2016-2017.

Conference Organization

1. 2015: Special Session Chairperson (Image Processing and Pattern Recognition) on "IEEE ICTAI", Italy.
2. 2016: Special Session Co-chairperson (Image Processing and Pattern Recognition)on "IEEE BHI", LAS Vegas, USA.
3. 2019: Reviewer and track co-chair (Image Processing and Pattern Recognition)"IEEE ICREST", Dhaka, Bangladesh.
4. 2019: Session co-chair (Image Processing and Pattern Recognition)"IEEE ICREST", Dhaka, Bangladesh.
5. 2020: Session Chair (Image Processing and Pattern Recognition)"IEEE STI", Dhaka, Bangladesh.

Research Output

Conference Papers (Peer Reviewed)

1. Shahriar Sazzad T. M., Armstrong L. J., Tripathy A.K., "An Automated Ovarian Tissue Detection Approach Using Type P63 Non-Counter Stained Images to Minimize Pathology Experts Observation Variability", IEEE IECBES 2016, 5-7 December, 2016, Malaysia.

2. Shahriar Sazzad T. M., Armstrong L. J., Tripathy A.K., "P63 Digitized Color Images Performs Better Identification for Ovarian Reproductive Tissue Analysis", IEEE Second International Image Processing, Applications and Systems Conference (IPAS), November 4-7, 2016, Tunisia.

3. Shahriar Sazzad T. M., Armstrong L. J., Tripathy A.K., "A Comprehensive Analysis and Review: Automated Ovarian Tissue Detection Using Type P63 Pathology Color Images", IEEE The 13th International Joint Conference on Computer Science and Software Engineering (JCSSE), Thailand.

4. Shahriar Sazzad T. M., Armstrong L. J.,Tripathy A.K. (2016) ,"Type P63 Digitized Color Images Performs Better Identification for Ovarian Tissue Analysis". International Conference on Mass Data Analysis of Images and Signals (MDA), MDA 2016,New York, USA, July 9 -12, 2016.

5. Shahriar Sazzad T. M., Armstrong L. J.,Tripathy A.K. (2016), "A Comprehensive Analysis: Automated Ovarian Tissue Detection Using Type P63 Pathology Color Images". International Conference on Machine Learning and Data Mining (MLDM), MLDM 2016, New York, USA, July 16 -21, 2016.

6. Shahriar Sazzad T. M., Armstrong L. J.,Tripathy A.K. (2016), "Type P63 Non-Counter Stained Digitized Color Images Performs Better Identification than Other Stains for Ovarian Tissue Analysis". 20th International Conference Information Visualization (IV16), Portugal, 19 - 22 July 2016.

7. Shahriar Sazzad T. M., Armstrong L. J., Tripathy A.K. (2016), "A Comparative Study of Computerized Approaches for Type P63 Ovarian Tissues Using Histopathology Digitized Color Images". 10th International Conference on Computer Graphics, Visualization, Computer Vision and Image Processing (CGVCVIP 2016), Portugal, July 1-4, 2016.

8. Shahriar Sazzad T. M., Armstrong L. J., Tripathy A.K.(2016), "Type P63 Digitized Color Images Performs Better Identification than Other Stains for Ovarian Tissue Analysis". IX Conference on Articulated Motion and Deformable Objects (AMDO), Palma, Mallorca, Spain. 13-15 July 2016.

9. Shahriar Sazzad T. M., Armstrong L. J.,Tripathy A.K. (2016), "An automated approach to detect human ovarian tissues using type P63 counter stained histopathology digitized color images". 2016 IEEE-EMBS International Conference on Biomedical and Health Informatics, BHI 2016, Las Vegas, NV, USA, February 24-27, 2016. IEEE 2016, ISBN 978-1-5090-2455-1.

10. Shahriar Sazzad T. M., Armstrong L. J.,Tripathy A.K. (2015), "An Automated Detection Process to Detect Ovarian Tissues Using Type P63 Digitized Color Images". 27th IEEE International Conference on Tools with Artificial Intelligence, ICTAI 2015, Vietrisul Mare, Italy, November 9-11, 2015. IEEE Computer Society 2015, ISBN 978-1-5090-0163-7.

11. Shahriar Sazzad T. M., Armstrong L. J., Tripathy A.K. (2016), "An Automated Ovarian Tissue Detection Approach Using Type P63 Counter Stained Images to Minimize Pathology Experts Observation Variability". 11th

International Conference on Computer Graphics, Visualization, Computer Vision and Image Processing (CGVCVIP 2016), Lisbon, Portugal, July 2017.

12. Shahriar Sazzad T. M., Misbah Ul Hoque(2019), "Development of Automated Brain Tumor Identification Using MRI Images", 2nd International Conference on Electrical, Computer and Communication Engineering (ECCE), 2019, Cox's bazar, Bangladesh,February 07-09, 2019.

13. Shahriar Sazzad T. M., Misbah Ul Hoque, Farabi Rahman (2019), "An Automated Approach to Detect Breast Tumor using Ultrasound Images", IEEE 1st International *Conference* on Advances in Science, Engineering and Robotics Technology *2019* (ICASERT-*2019*), 2019, Dhaka, Bangladesh,May 03-05, 2019.

14. Shahriar Sazzad T. M., Rifath Mahmud (2020), "Breast tumor detection using MRI images", ACM International Conference on Computing Advancements (ICCA), 2020, Dhaka, Bangladesh, January 10-012, 2020 (submitted and under review).

15. Shahriar Sazzad T. M., MahmudaAkter (2019), "Breast tumor analysis using Ultrasound images", IEEE International Conference on Sustainable Technologies for Industry (STI), 2019, Dhaka, Bangladesh, December 24-25, 2019 (submitted and under review).

Journal Papers

1) Shahriar Sazzad T. M., Armstrong L. J.,Tripathy A.K., "Computer Based Automated Approach for Type P63 Digitized Color Images to Identify Ovarian Tissues" (Submitted in IEEE Transactions in Medical Imaging and currently under review).

2) Shahriar Sazzad T. M., Armstrong L. J.,Tripathy A.K. , "A Review of Ovarian Histopathology Microscopic Tissues Image Analysis" (Submitted in IEEE Transactions in Medical Imaging and currently under review).

3) Sazzad, T. S., Islam, S., Mamun, M. M. R. K., & Hasan, M. Z. (2013). Establishment of an efficient color model from existing models for better gamma encoding in image processing. International Journal of Image Processing (IJIP), 7(1), 90.

4) Sazzad, T. S., & Islam, S. (2013). Use of gamma encoder on HSL color model improves human visualization in the field of image processing. International Journal of Engineering Research and Engineering (IJCSE), Issues, 1(1), 177-182.

5) Sazzad, T. S., & Islam, S. (2013). Automatic detection of human body parts especially human hands considering gamma correction and template matching on noisy images. International Journal of Engineering Research and Applications (IJERA), ISSN, 2077-1207.

6) Hasan, M. Z., Sazzad, T. S., & Rahman, M. H. (2012). Use of Gamma Encoder for Image Processing considering Human Visualization. International Journal of Computer Applications (IJCA), 58(10).

7) Ahmed, M., Sazzad, T. S., &Mollah, M. E. (2012). Cryptography and State-of-the-art Techniques. IJCSI International Journal of Computer Science Issues, 9(2-3).

Supervisions

1) 2011 – 2018: Supervisor for 25+ Undergraduate thesis (Green University of Bangladesh, Bangladesh).
2) 2019 – to date: Supervisor for 3 MSc Students (MIST, Bangladesh).
3) 2019 – to date: Co-supervisor for 1 PhD Student (ECU, Australia).

Teaching and Curriculum Development Experience

My teaching areas are focused in the following areas including:

1. Programming in C
2. Computer Algorithms
3. Computer fundamentals
4. Digital Logic Design
5. Computer Architecture
6. Software Engineering
7. Data Structure
8. Image Processing
9. Pattern Recognition
10. Machine Learning
11. Computer Vision
12. Assembly Language
13. Database management Systems
14. Advanced Operating Systems
15. Human Computer Interaction
16. Introduction to Programming (JAVA)
17. Advanced Biomedical Image Processing
18. Data Mining
19. Advanced Medical Image Processing

Other Technical Skills

Computing Research Tools Image processing techniques using MATLAB, IMAGEJ; EMU 8086; EndNote; Java programming (JSEE and, JEEE) using Netbeans IDE; C programming using Turbo C, CodeBlocks; C#, .Net programming environment using Visual Studio, C++, PYTHON, R, PASCAL, VB.

Referees

1. Dr. Leisa J. Armstrong (PhD Supervisor), Edith Cowan University Email: l.armstrong@ecu.edu.au

2. Professor Dr. Amiya Kumar Tripathy (PhD Supervisor), Don Bosco Institute of Technology, Mumbai, India, Email: amiya@dbit.in